# Operating Instructions

STEREO DOUBLE CASSETTE
TAPE DECK AMPLIFIER
## DC-X20Z/DC-X21Z

FM/AM DIGITAL SYNTHESIZER TUNER
## F-X20Z/F-X21Z
## F-X20ZL/F-X21ZL (Only available in European countries.)

AM/FM STEREO TUNER
## F-X10Z/F-X11Z
## F-X10ZL/F-X11ZL (Only available in European countries.)

STEREO TURNTABLE
## PL-X20Z/PL-X21Z
## PL-X10Z/PL-X11Z

*"This product is manufactured to comply with the radio interference requirements of EEC Directive 76/889/EEC and 82/499/EEC."*

Thank you for buying this Pioneer product.
Please read these operating instructions thoroughly, so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
For the sake of convenience, these operating instructions are based on the model HE, and they can be used for the HB, YP, KU, KC, S and S/G models.
The differences between the models are given below.

**HE model:**
For Europe excluding U.K. ('HE' stamped on packing case): Power line voltage is AC 220 volts.

**HB model:**
For U.K. ('HB' stamped on packing case): Power line voltage is AC 240 volts.

**YP model:**
For Australia ('YP' stamped on packing case): Power line voltage is AC 240 volts.

**KU and KC models:**
For U.S.A. and Canada ('KU' or 'KC' stamped on packing case): Power line voltage is AC 120 volts.

**S and S/G models:**
For destinations excluding above ('S' or 'S/G' stamped on packing case): A 4-point (110 V/120 V/220 V/240 V) voltage selector switch is provided.

*NOTE:*
*Depending upon the model, the design of the power plug and the power outlet differs.*

The line voltage selector switch is located on the rear panel of the unit. Please check that it is set properly before plugging the power cord into an outlet. If it is not set properly, change the setting according to the LINE VOLTAGE SELECTION (D and D/G models only).

## IMPORTANT NOTICE (For KU and KC models)

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure place. This is for your security.

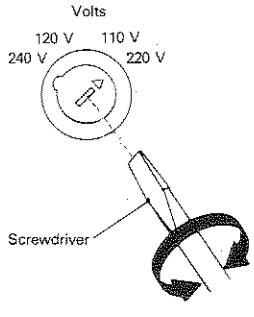
## WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

These operating instructions are applicable to all models listed above. Refer to the items corresponding to your model.

## LINE VOLTAGE SELECTION (S and S/G models only)

Before your model is shipped from the factory, the switch is set to the power requirements of the destination; nevertheless, you should check that it is set properly before plugging the power cord into the AC outlet.

1. Disconnect the power cord.
2. Provide yourself with a medium size screwdriver.
3. Insert the screwdriver into the groove on the voltage selector and adjust to the voltage value of your area.




HE (for Europe excluding U.K.), HB (for U.K.), YP (for Australia), KU (for U.S.A.) and KC (for Canada) models are not provided with a LINE VOLTAGE SELECTOR switch.

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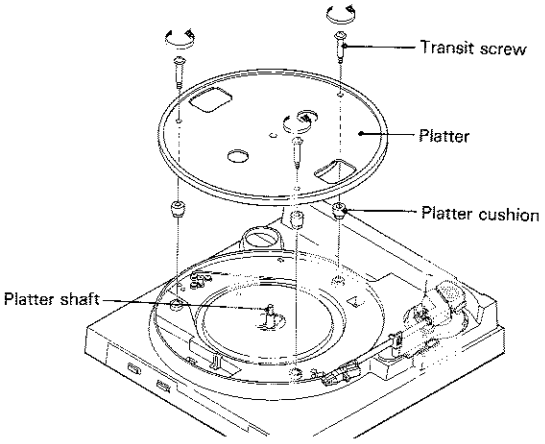
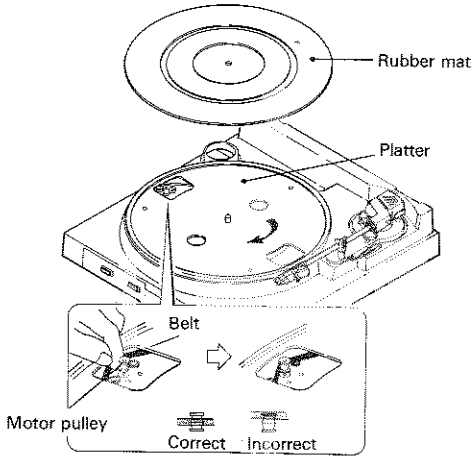
# INITIAL TURNTABLE SET-UP

1. Remove the dust cover by pulling it straight up from the cabinet.
2. Remove the transit screws, platter, and the platter cushions.
   - The turntable will not operate unless the transit screws are removed.
   - Keep the screws and cushions in a safe place, since they are required when transporting the turntable.
3. Place the platter over the platter shaft.
4. Place the belt over the motor pulley. Rotate the platter clockwise by hand and check that the belt has been placed over the motor pulley properly.
5. Place the rubber mat over the platter.
6. Mount the dust cover. Hold the dust cover and slide the hinges into the hinge holders.

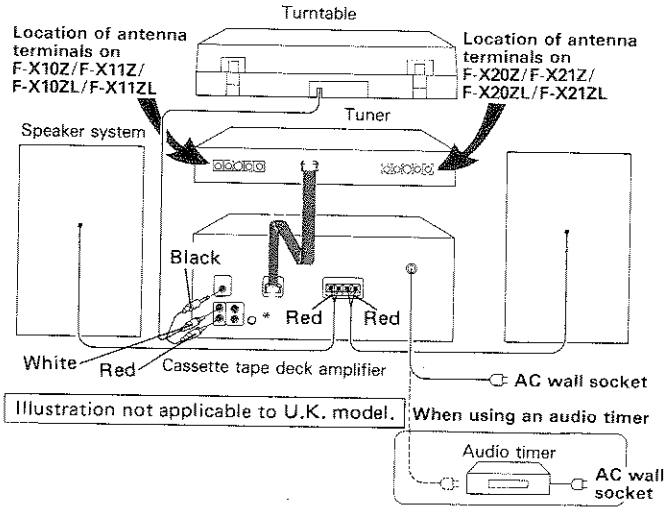



# CONNECTIONS

For details, refer to ANTENNA INSTALLATION on page 7 for the connection of the FM and AM antennas.

- Before performing connections, turn off the power switch of the cassette tape deck amplifier.
- Insert the plugs as far as they will go. An improper connection or poor contact will result in no sound, or will degrade the sound.
- Connect the white plug to the left channel and the red plug to the right channel.




- For the sake of convenience, the expression "turntable legs" is abbreviated in the instructions.

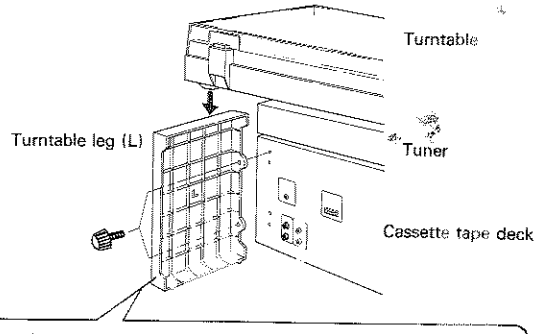
*REC VOLUME

REC VOLUME control adjusts recording level when recording from an equipment connected to the CD/VIDEO terminal. Set the volume knob completely turned clockwise ( ). If the recording level is too high, adjust the level turning the knob counter-clockwise ( ).

### Attaching the legs of the turntable

Attach the legs accompanying the turntable to the rear panel of the cassette deck amplifier.

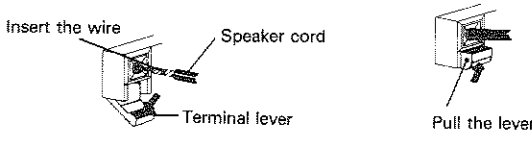
- Be sure to attach the left (L) and right (R) legs to their proper positions. Left and right sides are as seen from the rear.
- Mount the turntable securely on top of the legs.




Since the tape deck amplifier has a short front-to-back dimension, these legs are necessary to support the turntable.
**CAUTION:** The turntable legs are used with Pioneer DC-X20Z/DC-X21Z models only. Use with other models may result in instability causing possible injury.

### CONNECTING THE SPEAKER CORDS

1. Push down on the terminal lever and insert the speaker wire into the hole.
2. Pull the terminal lever forward with your finger.



# AM/FM CHANNEL STEP SWITCH

This switch is provided on models F-X20Z/Z and F-X21Z/Z only.
The AM/FM channel step switch is located on the rear panel of the digital synthesized tuner. Before the tuner leaves the factory, this switch is set to the channel allotment plan of the area in which the tuner is sold. When the TUNING switch is given a single push, the frequency display will change in the following units.

| Model destination | CHANNEL STEP switch position | Frequency change | |
|---|---|---|---|
| | | FM mode | AM mode |
| Continental U.S.A. | 100 kHz/10 kHz | 100 kHz | 10kHz |
| Other countries | 50 kHz/9 kHz | 50 kHz | 9 kHz |

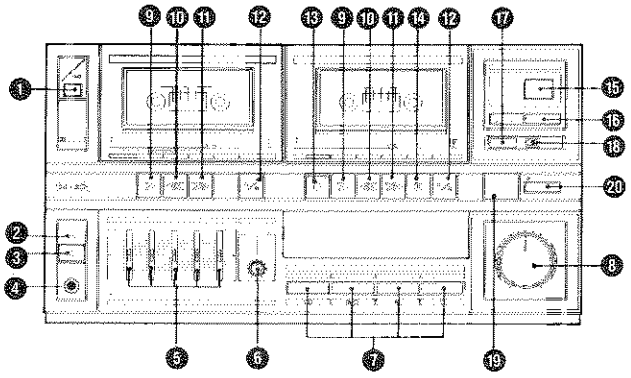
*NOTE:*
- *If the TUNING switch is held in the depressed position, the frequency display will change continuously and stop when the switch is released.*
- *If the switch is set to the wrong position, correct tuning will not be possible.*

Consult your dealer if you are not sure about the channel allotment plan in your area.

# FRONT PANEL FACILITIES

## STEREO DOUBLE CASSETTE TAPE DECK AMPLIFIER

Deck I (Only for playback) Deck II (Recording/Playback)



**⓫ REC indicator**
This lights during the recording mode.

**⓬ POWER indicator**

**⓭ POWER switch**

**⓮ HEADPHONES jack**

**⓯ GRAPHIC EQUALIZER controls**
By operating these five controls, equalization effects can be added to program source or tape playback sounds.

**⓰ BALANCE control**

**⓱ FUNCTION switches**
TAPE ( ): Push when playing back tapes.
CD/VIDEO ( ): Push when listening to a component connected to the CD/VIDEO terminals.
TUNER ( ): Push when listening to broadcasts on the tuner.
PHONO ( ): Push when playing records on the turntable.

**⓲ VOLUME control**

**⓳ PLAY switch ( ▷ )**

**⓴ REW switch ( ◁◁ )**

**㉑ FF switch ( ▷▷ )**

**㉒ STOP/ EJECT switch ( ▢/⏏ )**

**㉓ REC switch ( ○ )**

**㉔ PAUSE switch ( ⏸ )**

**㉕ HIGH SPEED COPY switch**
OFF ( ▀ ): Tapes are copied at the normal speed.
ON ( ▬ ): Tapes are copied at twice the normal speed.

*NOTE:*
- *Do not change the switch position during tape copying.*
- *When this switch is set to the ON position, recording of an external source (equipment connected to the CD/VIDEO terminals, a turntable or tuner) is not possible. When not performing high speed tape copying, always leave in the OFF position.*

**㉖ *DOLBY NR switch**
Push this switch to ON when recording with the built-in Dolby noise reduction system (B type), and when playing back tapes which have been recorded using the system.

*Noise Reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trademarks of the Dolby Laboratories Licensing Corporation.

**㉗ TAPE COUNTER**
This indicates the transport position of the tape loaded in Deck II with a three-digit number.

**㉘ RESET button**
Push this button to reset the tape counter display to 000.

**㉙ SYNCHRO REC START switch**
When this switch is pressed, Deck I will enter the playback mode, and Deck II will simultaneously begin recording.

**㉚ REC MUTE switch**
Use for creating non-recorded blank spaces on the tape.

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

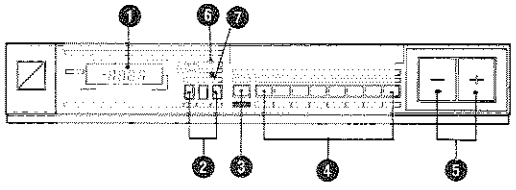
CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

**CAUTION:**
**TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**Auto Tape Selector**
The purpose of the auto tape selector provided on this machine is to select automatically between normal and metal tapes.

## DIGITAL SYNTHESIZER TUNER [F-X20Z/F-X21Z/F-X20ZL/F-X21ZL]



*NOTE:*
*The illustration is of the F-X20ZL/F-X21ZL.*

**❶ FREQUENCY display**

Permits reading the received frequency at a glance from the displayed figure. The FM band is indicated by MHz, and the AM or MW/LW band by kHz.

**❷ FUNCTION switch**

**MW**: Push to receive MW band broadcasts.
**LW**: Push to receive LW band broadcasts.
**FM**: Push to receive FM band broadcasts.

Only AM/FM switching is available for the F-X20Z/F-X21Z models.

**❸ MEMORY switch**

Push to operate the memory circuit. After the switch is pressed, the memory circuit will function for about ten seconds. During this time, press one of the STATION CALL switches to memorize the station being currently received. If more than ten seconds elapses after the MEMORY switch is pressed, no stations can be memorized. In this case, press the MEMORY switch again if you wish to memorize a station.

**❹ STATION CALL switches**

These are used to preset and recall broadcasting stations. A total of 16 stations can be preset [FM: 8, AM (MW or LW): 8].

- To tune in to a prememorized station, push the appropriate STATION CALL switch.
- Once the stations have been preset, all you have to do to recall them is push the STATION CALL switch.

**❺ TUNING switches**

These are used to locate the stations. Push either of these two switches; the left switch "−" to go to a lower, and the right switch "+" to go to a higher frequency.

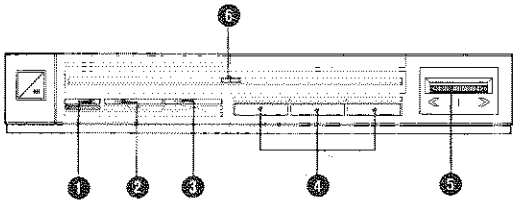
**❻ TUNED indicator**

This lights to indicate when the finest tuning of a station has been achieved.

**❼ STEREO indicator**

This lights when a stereo program has been picked up during an FM broadcast.

## STEREO TUNER [F-X10Z/F-X11Z/F-X10ZL/F-X11ZL]



*NOTE:*
*The illustration is of the F-X10ZL/F-X11ZL.*

**❶ POWER indicator**

**❷ TUNED indicator**

This lights up to indicate when finest tuning of a station has been achieved.

**❸ STEREO indicator**

This lights when a stereo program has been picked up during an FM broadcast.

**❹ Function switch**

**MW**: Push to receive MW band broadcasts.
**LW**: Push to receive LW band broadcasts.
**FM**: Push to receive FM band broadcasts.

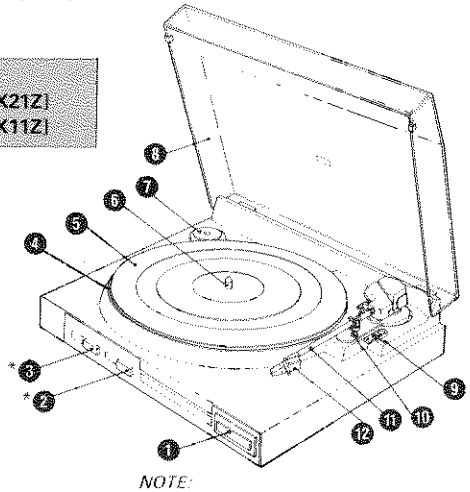
Only AM/FM switching is available for the F-X10Z/F-X11Z models.

**❺ Tuning knob**

Rotate this knob to pick up station.

**❻ Dial pointer**

## TURNTABLE [PL-X20Z/PL-X21Z] [PL-X10Z/PL-X11Z]



*NOTE:*
*Illustration shows the PL-X20Z/PL-X21Z.*

**❶ PLAY /STOP switch (Only PL-X20Z/PL-X21Z)**

Press this switch when starting auto play or when stopping play.

*NOTE:*
*On the PL-X10Z and PL-X11Z, this switch is the SPEED switch as well.*

**❷ DISC SIZE switch (Only PL-X20Z/PL-X21Z)**

Set this switch in accordance with the size of the record.
30 ( ▬ ): For 30 cm LP records. 17 ( ■ ): for 17cm EP records.

**❸ SPEED switch (Only PL-X20Z/PL-X21Z)**

Set this switch in accordance with the speed of the record.
33 ( ▬ ): For 33-1/3 rpm records. 45 ( ■ ): For 45 rpm records.

**❹ Platter**

**❺ Rubber mat**

**❻ Platter shaft**

**❼ EP adaptor**

**❽ Dust cover**

**❾ Arm elevation lever**

**❿ Arm rest and clamper**

**⓫ Tonearm**

**⓬ Cartridge**

**NOTE:*
*PL-X10Z/PL-X11Z are not equipped with features ❷ and ❸.*

# OPERATIONS

- Set the cassette tape deck amplifier's POWER switch to ON.
- Adjust the volume with the VOLUME control and tone with the GRAPHIC EQUALIZER controls on the cassette tape deck amplifier.

**DC-X20Z/DC-X21Z**

## TAPE PLAYBACK

Playback can be performed on either Deck I or Deck II, but if both decks are placed in the playback mode, Deck I will automatically be given priority. If you wish to perform playback on Deck II, be sure that Deck I is in the stop mode.

1. Push the FUNCTION switch in the TAPE position.
2. Load a pre-recorded cassette securely.
3. Select the DOLBY NR switch position.
4. Push the PLAY switch.
5. Push the STOP/EJECT switch to stop the tape playback.

## RECORDING (function of Deck II only)

1. Set the FUNCTION switch to the position corresponding to the recording program source (CD/VIDEO, TUNER, or PHONO).
2. Load a non-recorded cassette tape in Deck II.
3. Select the DOLBY NR switch position.
4. Push the REC switch. The REC indicator will light up.
5. Push the STOP/EJECT switch to stop the recording.

*NOTE:*
***Graphic equalizer effects can be added to the speaker output, but such effects cannot be recorded on the tape.***

**Using the graphic equalizer**

By using the five controls on the graphic equalizer, it is possible to boost certain frequencies and attenuate others. This function can be used to perform precise tone adjustment not possible with ordinary tone controls. By looking at the position of the sliding controls, adjustments to the output spectrum are visible at a glance. The center ("0") position of each control is the standard setting.

**Auto-Stop Mechanism**

When the tape is fully wound onto one reel during recording, playback, fast forward, or rewind, the auto-stop mechanism operates to release the tape mechanism and bring the tape to a stop without having to press the STOP switch.

This mechanism prevents the tape from becoming stretched and the pinch rollers from being deformed.

**Erasing the tape (function of Deck II only)**

When recording on a previously recorded tape, the previously recorded sounds will be erased and new recording entered on the tape. To erase a previously recorded tape without recording anew, perform the following operations:

1. Load the cassette tape into Deck II.
2. Set Deck I to the stop mode.
3. Push the FUNCTION switch in the TAPE position.
4. Push the REC switch to begin erasing.

## USING THE REC MUTE SWITCH (function of Deck II only)

During recording, while the REC MUTE switch is held depressed (ON), input signals are not recorded, thus allowing you to create blank spaces on the tape. Use this function when recording radio broadcasts to cut out commercials or narration between programs, to create tapes with continuous music only, to create the 4 seconds or more interval between programs which is required by the music search function, etc.

Be careful not to press the REC MUTE switch except when necessary.

## RELAY PLAY (from Deck I to Deck II)

Relay play is possible from Deck I to Deck II but not vice versa.

1. Load the prerecorded cassette tapes to be played back into Deck I and Deck II.
2. Push both of the PLAY switches. Deck I will be set to the playback mode and Deck II to the playback standby mode.
3. When Deck I has finished playing and stops automatically, Deck II will automatically begin playback.
4. When the tape in Deck II has reached its end, the relay play will automatically stop.

## MUSIC SEARCH OPERATION (function of Deck I only)

While the tape is being fast forwarded or rewound, the deck will automatically be set to the playback mode when a "non-recorded interval" lasting four seconds or more is detected between programs on the tape.

1. Push the PLAY switch.
2. Push the FF switch to listen to the program following the one presently playing. Push the REW switch to listen once more to the program presently playing. If the direction of tape travel is changed in the middle of music search operation, momentary noise may result. This is not a malfunction.
3. When the non-recorded interval between programs has been detected, the unit will be placed automatically in the playback mode.

*NOTE:*
*The music search function may not operate properly when used with the following types of tapes. This does not, however, indicate that the unit has malfunctioned.*

- *Tapes which do not have non-recorded intervals of about four seconds between programs.*
- *Tapes of classical music on which, for example, pianissimo sections continue for many seconds; or tapes including programs in which the sound is broken for several seconds.*
- *Tapes whose programs have all been recorded at a low level.*
- *Tapes with extremely quiet portions lasting more than about four seconds.*
- *Tapes of conversation in which the recording of the voices is intermittent.*

## TAPE COPYING (from Deck I to Deck II)

Load the playback tape (pre-recorded original tape) into Deck I and the non-recorded tape (blank tape) into Deck II. When performing tape copying, the copy will have the same characteristics as the tape in Deck I (original tape), regardless of the position of the Dolby NR switch.

- **HIGH SPEED COPY**

1. Push the HIGH SPEED COPY switch to ON.
2. Push the SYNCHRO REC START switch to ON.
3. To stop the tape copying, push both STOP switches.

*NOTE:*
*When performing high speed tape copying, tape copying will take place regardless of the position of the FUNCTION switch. However, sound heard from the speakers will be that of source selected by the FUNCTION switch.*

- **NORMAL SPEED COPY**

1. Release the HIGH SPEED COPY switch to OFF.
2. Push the FUNCTION switch in the TAPE position.
3. Push the SYNCHRO REC START switch to ON.
4. To stop the tape copying, push the both STOP switches.

*NOTE:*
*When performing tape copying at normal speed, be sure to set the FUNCTION switch to the TAPE position. If set to any other position, the signal from that source will be recorded.*

**F-X10Z/F-X11Z/F-X10ZL/F-X11ZL**

## FM AND AM (MW/LW) RECEPTION

1. Push the FUNCTION switch in the TUNER position on the cassette deck amplifier.
2. Push the appropriate function switch on the stereo tuner.
3. Rotate the tuning knob and tune in the desired station.

**F-X20Z/F-X21Z/F-X20ZL/F-X21ZL**

## FM AND AM (MW/LW) RECEPTION

**Manual Tuning**

1. Push the FUNCTION switch in the TUNER position on the cassette deck amplifier.
2. Push the appropriate function switch on the stereo tuner.
3. Push the TUNING switches ("–" or "+") and tune in the desired station.

**Memory tuning**

1. For steps 1, 2 and 3, the same as with manual tuning.
2. Push the MEMORY switch. During the approximate ten seconds which the memory circuit functions, push the desired STATION CALL switch to memorize the current frequency in that switch.
3. Repeat step 2 for each STATION CALL switch. The previous memory will be erased when a new frequency is committed to the memory of the same STATION CALL switch. An erasure cannot be made without a new input.

- *The electrical circuit controlling the MEMORY function is powered by a back-up condenser so that the unit will retain preset stations for a number of days. If a preset station has been erased, reset it.*

## PL-X10Z/PL-X11Z

### RECORD PLAY

1. Push the FUNCTION switch in the PHONO position on the cassette deck amplifier.
2. Place the record on the rubber mat.
3. Remove the stylus cover and release the clamper.
4. Set the SPEED switch.
5. Move the tonearm by hand to the record. At this stage, the turntable starts to rotate.
6. Move the arm elevation lever to the down position.

## PL-X20Z/PL-X21Z

### RECORD PLAY

1. Push the FUNCTION switch in the PHONO position on the cassette deck amplifier.
2. Place the record on the rubber mat.
3. Remove the stylus cover and release the clamper.
4. Set the SPEED and DISC SIZE switches.
5. Move the arm elevation lever to the down position.
6. Push the PLAY/ STOP switch to start record play.

*NOTE:*
- *When play is completed, the tonearm will return automatically to the arm rest.*
- *When playing 45 rpm records with large center holes, place the EP adaptor onto the platter shaft.*

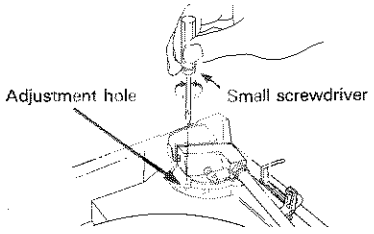
**To interrupt the playing of a record**

Move the ARM ELEVATION lever to the UP position to lift the tonearm. The tonearm will descend slowly and resume playing in the same groove when the ARM ELEVATION lever is set to the DOWN position.

### ADJUSTING THE STYLUS DESCENT POSITION

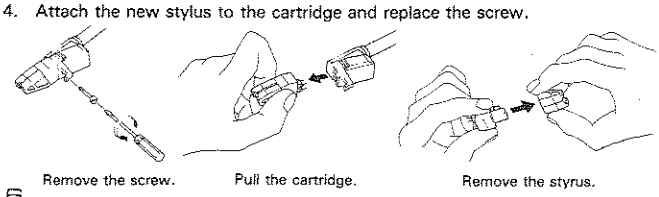
Proceed as follows when the stylus does not descend at the proper position on the record during auto play. While performing the adjustment, take care not to scratch the record with the stylus.

1. Place a 30 cm LP record on the platter.
2. Push the PLAY/STOP switch to start auto play. Check the direction and amount of stylus deviation (how many millimeters toward the inside or outside of the record's lead-in groove).
3. Push the PLAY/ STOP switch to return the tonearm to the arm rest.
4. Set the arm elevation lever to the UP position and manually move the tonearm across the outside edge of the record.
5. Rotate the screw with a small screwdriver in accordance with the direction of the deviation observed in step 2.
   - Rotate the screw clockwise if the stylus descends on the outside of the proper position.
   - Rotate the screw counterclockwise if the stylus descends on the inside of the proper position.
6. Manually return the tonearm to the arm rest and set the arm elevation lever to the DOWN position.
7. Push the PLAY/STOP switch and check that the stylus stops at the lead-in groove on the outer circumference of the record. If the position is still not correct, repeat steps 2 to 6.




### REPLACING THE STYLUS

1. Remove the screw.
2. Pull the cartridge.
3. Remove the stylus gently.
4. Attach the new stylus to the cartridge and replace the screw.



Remove the screw. Pull the cartridge. Remove the styrus.

# MAINTENANCE

### CLEANING THE HEAD SECTION

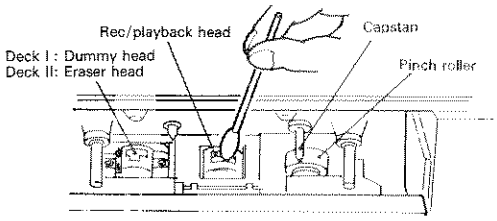
The heads, capstan and pinch roller are parts which are liable to get dirty quite easily. In particular, if the heads are dirty, the high frequency components of the sound will not be reproduced and the stereo balance will be impaired, resulting in a deterioration in sound quality. It is therefore recommended that the head section be cleaned regularly.

1. Push the STOP/EJECT switch to open the cassette door.
2. Dip a cleaning swab into the cleaning fluid and use it to wipe the heads, capstan, and pinch roller.

### DEMAGNETIZING THE HEAD

The rec/playback head becomes magnetized when you use the tape deck for prolonged periods of time. This results in noise being generated and the treble dropping off during recording and playback. The rec/playback head should therefore be demagnetized regularly with a head demagnetizer (sold separately). For further details, refer to the operating instructions accompanying your head demagnetizer.

*NOTE:*
- *Do not hold screwdrivers, metal objects, or magnets close to the heads.*
- *When demagnetizing the heads, be sure the unit's POWER switch is in the OFF position.*




# CASSETTE TAPES

**Slack or Protruding Tape**

If any tape is protruding from the cassette as shown in Fig. A or is slack, the tape may run without passing between the capstan and pinch roller and so may be damaged. Take up any slack by inserting a pencil through the reel hub and turning it as shown in Fig. A. Some tapes have a tape stopper to prevent tape slack. Make sure it is removed before loading the tape into the deck.

**Erasure Prevention Tabs**

Cassette tapes are provided with erasure prevention tabs (see Fig. B) which act as a protection device to prevent valuable recordings from being accidentally erased. If these tabs are removed with a screwdriver as shown in Fig. B, you will be able to prevent any erasure of programs even if you accidentally set the tape deck to the recording mode by pushing the REC switch. To re-record a tape which has had its tabs removed, cover the tab opening with a double layer of adhesive tape (see Fig. C).

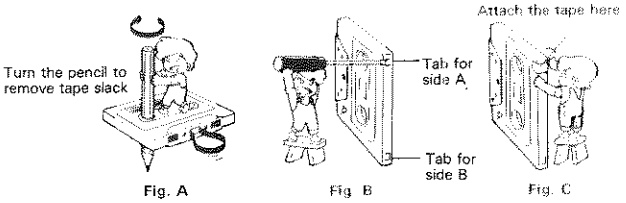



Fig. A Fig. B Fig. C

*NOTE:*
- *The service life of the stylus on the supplied cartridge ranges from 800 to 1,000 hours.*
- *Using a worn or damaged stylus can damage your records and distort the sound reproduction. Remember to replace the stylus at the earliest possible date.*
- *Always use the PIONEER "PN-290T" as a replacement stylus.*
- *Always ask for a genuine PIONEER replacement stylus.*

TAP is the universal mark for the Plug-in connector system. Products carrying this mark are interchangeable and can be used together.

# ANTENNA INSTALLATION

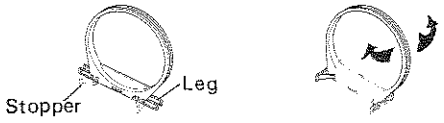
## AM LOOP ANTENNA INSTALLATION

The AM loop antenna is supplied with the stereo tuner. Connect the AM loop antenna to the AM antenna terminals.

*NOTE:*
- *Do not install the AM loop antenna in a location where it may come in contact with any metal objects.*
- *Keep the AM loop antenna connected even after an AM outdoor antenna has been erected.*

### AM LOOP ANTENNA

- Unfold all four legs of the AM loop antenna toward the outside, and insert the stopper inside the legs into the hole in the AM loop antenna to fix it in position.
- Set the antenna on a level surface, and point in the direction that gives optimum reception.
- Do not install the antenna in locations where it touches the metal objects, or near a CD player, personal computer, or television set.




### AM OUTDOOR ANTENNA

In areas with strong radio waves, the accessory AM loop antenna will be sufficient for radio reception. In the event that nearby buildings or objects make reception difficult, or when distance from broadcasting stations results in weak radio waves, an outdoor AM antenna should be installed.

## T-TYPE FM ANTENNA INSTALLATION

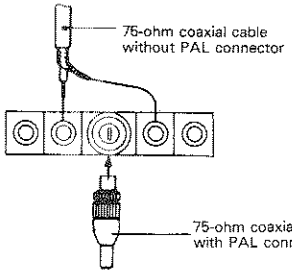
The T-type FM antenna is supplied with the stereo tuner. This should be used as a stopgap antenna until an outdoor FM antenna is erected.

1. Connect the two leads of the T-type FM antenna to the terminals marked BAL 300 ohms on the tuner's rear panel.
2. Spread the two ends of the T-type FM antenna horizontally and secure the antenna to a wall, etc.

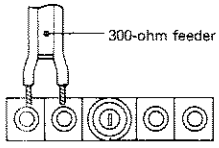
## EXTERNAL FM ANTENNA INSTALLATION

Use an external antenna when the signals from the station are weak and cannot be picked up by the accessory T-type FM antenna, or when the sound heard is accompanied by large amounts of noise. There are two ways of connecting the external FM antenna to the ANTENNA terminals: with 300-ohm feeder wire, or with a 75-ohm coaxial cable.
It is recommended that you use the 75-ohm coaxial cable so that the effects of extraneous noise are reduced to a minimum.

**When the connecting cable is 75-ohm coaxial cable**

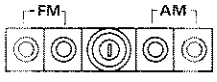



**When the connecting cable is a 300-ohm feeder wire**

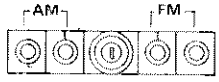



**Notes concerning the antenna terminals:**
- **The PAL connector is provided only on tuners with LW reception.**
- **Depending on the model, antenna terminals differ as shown below:**

**F-X10Z/F-X11Z/F-X10ZL/F-X11ZL**




**F-X20Z/F-Z21Z/F-X20ZL/F-X21ZL**




# RECORDING AND PLAYBACK USING AN AUDIO TIMER

- Connect the power cord of the cassette tape deck amplifier to the audio timer (See page 2) and check the HIGH SPEED COPY switch is OFF position.
- Operation may vary depending on the audio timer; be sure to consult the operating instructions for the audio timer.

## UNATTENDED RECORDING (function of Deck II only)

1. Set the POWER switch to ON.
2. Load a non-recorded (blank) tape into Deck II.
3. Push the FUNCTION switch in the TUNER position on the cassette deck amplifier and operate the tuner to tune in the station whose program is to be recorded.
4. Set the time on the audio timer so that the power comes on at the desired time (this action switches off the power to the cassette deck amplifier).
5. Push the REC switch.
6. At the preset time, the power will be switched on and recording will start automatically.

## WAKE-UP PLAYBACK (function of Deck I and Deck II)

1. Set the POWER switch to ON.
2. Load a pre-recorded cassette tape.
3. Push the FUNCTION switch in the TAPE position on the cassette deck amplifier and adjust the VOLUME control to the appropriate level.
4. Set the time on the audio timer so that the power comes on at the desired time (this action switches off the power to the cassette deck amplifier).
5. Push the PLAY switch. At the preset time, the power will be switched on and the playback will start automatically.

# SPECIFICATIONS

**DC-X20Z/DC-X21Z**

### AMPLIFIER SECTION

**Continous Average Power Output is 40 Watts* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz, with no more than 0.3% total harmonic distortion.**

**Measured pursuant to the Federal Trade Commission's Trade Regulation rules on Power Output Claims for Amplifiers.*

Continuous Power Output
- 40 to 20,000Hz ..... 40 W + 40 W (T.H.D. 0.3% 8 ohms)
- 1 kHz (DIN) ..... 50 W + 50 W (T.H.D. 1% 8 ohms)
- 1 kHz (DIN music power) ..... 70 W + 70 W (T.H.D. 1% 8 ohms)

Hum and Noise (IHF, short-circuited, A network)
- PHONO ..... 72 dB

Hum and Noise (DIN continous Power/50 mV)
- PHONO ..... 68 dB/60 dB

Total Harmonic Distortion (40 Hz to 20,000 Hz, 8 ohms), from CD/VIDEO
- 20 Watts per channel power output ..... No more than 0.2%

# SPECIFICATIONS

**Tape Deck Section**

Systems ..... 4 track, 2-channel stereo
Heads ..... "Hard Permalloy" recording/playback head x 1
"Hard Permalloy" playback head x 1
"Ferrite" erasing head x 1
Dummy head x 1
Motor ..... DC servo 2 speed motor x 2
Wow and Flutter ..... No more than 0.08% (WRMS)
No more than ±0.20% (DIN)
Fast Winding Time ..... Approximately 115 seconds (C-60 tape)
Frequency Response
−20 dB recording:
Normal tape ..... 35 to 13,000 Hz
Metal tape ..... 35 to 15,000Hz
Signal-to-Noise Ratio
Dolby NR OFF ..... More than 55 dB
Noise Reduction Effect
Dolby NR B type ON ..... More than 10 dB (at 5 kHz)

**Furnished Parts**

Operating Instructions ..... 1

**Miscellaneous**

Power requirements
KU and KC models ..... AC 120 V, 60 Hz
HE model ..... AC 220 V, 50/60Hz
HB and YP models ..... AC 240 V, 50/60 Hz
S and S/G models ..... AC 110 V/120 V/220 V/240 V, 50/60 Hz (switchable)

**Power Consumption**

KU model ..... 199 W
KC model ..... 199 W
HE, HB, and YP models ..... 300 W
S and S/G models ..... 199 W
Dimensions ..... 360(W) x 188(H) x 224 (D) mm
14-3/16(W) x 7-6/16(H) x 8-13/16(D) in
Weight (without package) ..... 7 kg (15 lb 7 oz)

## F-X20Z/F-X21Z/F-X20ZL/F-X21ZL

**FM Tuner Section**

Frequency range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... 11.2 dBf, IHF (1.0 μV/75 ohms)
Sensitivity (DIN) ..... Mono: 0.9 μV/75 ohms
Stereo: 31.5 μV/75 ohms
Signal-to-Noise Ratio (IHF, 85 dBf Input) ..... Mono: 77 dB
Stereo: 73 dB
Signal-to-Noise Ratio (DIN) ..... Mono: 66 dB
Stereo: 60 dB
Distortion ..... Stereo: 0.4% (1 kHz)
Alternate Channel Selectivity ..... 67 dB (400 kHz)
Stereo Separation ..... 40 dB (1kHz)
Antenna Input ..... 300 ohm balanced
75 ohm unbalanced

**MW Tuner Section**

Frequency range ..... 530 kHz to 1600 kHz when 10 kHz step
531 kHz to 1602 kHz when 9 kHz step
Sensitivity (IHF, Loop antenna) ..... 300 μV/m
Signbal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop Antenna

**LW Tuner Section (For LW-equipped models only)**

Frequency range ..... 153 kHz to 281 kHz

**Miscellaneous**

Dimensions ..... 360(W) x 58(H) x 215(D) mm
14-3/16(W) x 2-5/16(H) x 8-7/16(D) in
Weight (without package) ..... 1.8 kg (4 lb)

**Furnished Parts**

FM T-type Antenna ..... 1
AM Loop Antenna ..... 1
Connection Cord ..... 1

## F-X10Z/F-X11Z/F-X10ZL/F-X11ZL

**FM Tuner Section**

Frequency range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... 15.3 dBf, IHF (1.6 μV/75 ohms)
Sensitivity (DIN) ..... Mono: 1.3 μV/75 ohms
Stereo: 35.4 μV/75 ohms
Signal-to-Noise Ratio (IHF, 85dBf Input) ..... Mono: 77 dB
Stereo: 73 dB
Signal-to-Noise Ratio (DIN) ..... Mono: 66 dB
Stereo: 60 dB
Distortion ..... Stereo: 0.4 % (1 kHz)
Alternate Channel Selectivity ..... 55 dB (400 kHz)
Stereo Separation ..... 40 dB (1kHz)
Antenna Input ..... 300 ohm balanced
75 ohm unbalanced

**MW Tuner Section**

Frequency range ..... 531 kHz to 1602 kHz
Sensitivity (IHF, Loop antenna) ..... 250 μV/m
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop Antenna

**LW Tuner Section (For LW-equipped models only)**

Frequency range ..... 153 kHz to 281 kHz

**Miscellaneous**

Dimensions ..... 360(W) x 58(H) x 216.5(D) mm
14-3/16(W) x 2-5/16(H) x 8-8/16(D) in
Weight (without package) ..... 1.6 kg (3 lb 8 oz)

**Furnished Parts**

FM T-type Antenna ..... 1
AM Loop Antenna ..... 1
Connection Cord ..... 1

## PL-X20Z/PL-X21Z/PL-X10Z/PL-X11Z

Drive System ..... Belt drive
Speeds ..... 33-1/3 and 45 rpm
Wow and Flutter ..... Less than 0.05% (WRMS)
±0.07% WTD Peak (DIN)
Signal-to-Noise Ratio ..... More than 68 dB (DIN-B)
(with Pioneer cartridge model PC-290T)
Usable cartridge ..... T4P cartridge

**PC-290T Specifications**

Type ..... IM type
Stylus ..... 0.6 mil diamond (PN-290T)
Output Voltage ..... 2.5 mV (1 kHz, 5cm/s LAT. Peak)
Frequency Response ..... 10 to 30,000 Hz
Recommended Load ..... 50 kohms

**Miscellaneous**

Power Requirements ..... DC 12V
Dimensions ..... 360(W) x 106(H) x 389(D) mm
14-3/16(W) x 4-3/16(H) x 15-5/16(D) in
Weight ..... 3.2 kg (7 lb 1 oz)

**Accessories**

EP Adaptor ..... 1
Turntable leg (L and R) ..... 2
Mounting screw ..... 4

*NOTE:*
*Specifications and design subject to possible modification without notice due to improvements.*

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# SAFETY INSTRUCTIONS

**READ INSTRUCTIONS** — All the safety and operating instructions should be read before the appliance is operated.

**RETAIN INSTRUCTIONS** — The operating instructions should be retained for future reference.

**HEED WARNING** — All warnings on the appliance and in the operating instructions should be adhered to.

**FOLLOW INSTRUCTIONS** — All operating and use instructions should be followed.

**WATER AND MOISTURE** — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

**LOCATION** — The appliance should be installed in a stable location.

**WALL OR CEILING MOUNTING** — The appliance should not be mounted to a wall or ceiling.

**VENTILATION** — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

**HEAT** — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

**POWER SOURCES** — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

**POWER-CORD PROTECTION** — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

**POLARIZATION** — If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

**CLEANING** — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

**POWER LINES** — An outdoor antenna should be located away from power lines.

**NONUSE PERIODS** — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

**OBJECT AND LIQUID ENTRY** — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

**DAMAGE REQUIRING SERVICE** — The appliance should be serviced by Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

**SERVICING** — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

**OUTDOOR ANTENNA GROUNDING** — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.

In the U.S.A. section 810 of the National Electrical Code, ANSI/NEPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

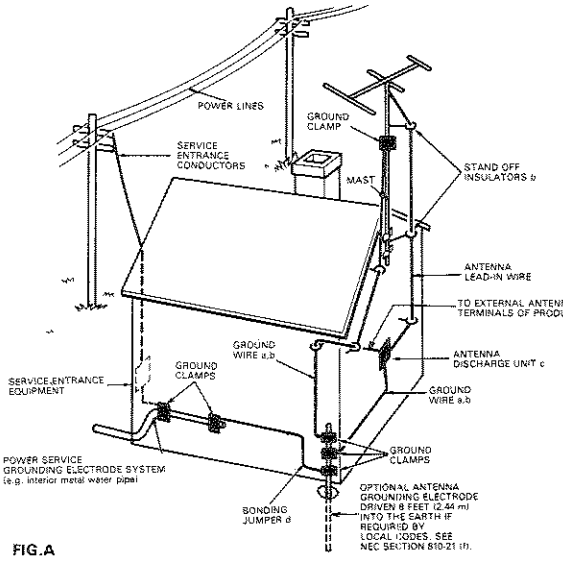
POWER LINES
GROUND CLAMP
SERVICE ENTRANCE CONDUCTORS
MAST
STAND OFF INSULATORS b
ANTENNA LEAD-IN WIRE
TO EXTERNAL ANTENNA TERMINALS OF PRODUCT
GROUND WIRE a,b
ANTENNA DISCHARGE UNIT c
GROUND CLAMPS
SERVICE-ENTRANCE EQUIPMENT
GROUND WIRE a,b
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (e.g. interior metal water pipe)
BONDING JUMPER d
OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44 m) INTO THE EARTH IF REQUIRED BY LOCAL CODES. SEE NEC SECTION 810-21 (f).

FIG.A

a) Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel, bronze wire, or larger as ground wire.

b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.

c) Mount antenna discharge unit as closely as possible to where lead-in enters house.

d) Use jumper wire not smaller than No.6 AWG (13.3 mm²) copper or equivalent when separate antenna-grounding electrode is used.

# IMPORTANT 1

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

**CAUTION:**
**TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

# IMPORTANT 2

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last, make sure that the power switch is off. Disconnect the wall plug when the equipment is not in (regular) use, e.g. when on vacation.

## FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code:

| | |
|---|---|
| Blue: | Neutral |
| Brown: | Live |

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

**Equipment sold in the U.K. is not supplied with a power plug.**